

WHAT IS CLAIMED IS:

1. A head assembly comprising:  
a slider including first bond pads electrically coupled to a transducer element;  
a microstructure including a body portion and a slider cavity in the body portion and the slider being supported in the slider cavity; and  
conductive leads on the body portion and the conductive leads being conductively coupled to second bond pads on a wall of the slider cavity to interface with the first bond pads of the slider supported in the slider cavity.
2. The head assembly of claim 1 wherein the conductive leads and second bond pads are recessed in the microstructure body portion.
3. The head assembly of claim 1 wherein the conductive leads and the second bond pads are deposited on the body portion.
4. The head assembly of claim 1 wherein the conductive leads and the second bond pads are fabricated in etched trenches on the body portion of the microstructure.
5. The head assembly of claim 1 wherein the second bond pads are raised from the wall of the slider cavity.
6. The head assembly of claim 1 wherein the microstructure body is formed of a silicon microstructure.
7. A head assembly comprising:

a slider including first bond pads electrically coupled to a transducer element;

a microactuator body including a base portion and a floating portion floatably coupled to the base portion and the slider being supported in a slider cavity formed in the floating portion and movable with the floating portion to adjust an orientation of the slider; and

conductive leads on the microactuator body and the conductive leads being conductively coupled to second bond pads on an inner wall of the slider cavity of the microactuator body to interface with the first bond pads of the slider supported in the slider cavity.

8. The head assembly of claim 7 and further comprising a micro electro-mechanical system interface between the base portion and the floating portion of the microactuator body to adjust the orientation of the slider.

9. The head assembly of claim 1 wherein the base portion of the microactuator body includes terminals conductively coupled to the conductive leads formed on the microactuator body.

10. An integrated interconnect assembly for a microstructure comprising:  
a microstructure body including a microstructure cavity having a bond pad formed on an inner wall of the microstructure cavity and conductively coupled to a lead on the microstructure body.

11. The assembly of claim 10 and further comprising a microstructure body supportable in the microstructure cavity and having a bond pad interfaceable with the bond pad formed on the inner wall of the microstructure cavity.

20250922 10:59:52

12. In combination:  
a first body having a bond pad formed thereon and a second body having  
a nest cavity and the first body supported in the nest cavity; and  
means for electrically coupling the bond pad on the first body supported  
in the nest cavity to circuitry coupled to the second body.
13. The combination of claim 12 wherein the means for electrically coupling  
includes a raised bond pad formed on a wall of the nest cavity of the second  
body.
14. The combination of claim 12 wherein the first body is a slider having a  
transducer electrically coupled to the bond pad on the first body.
15. A method for fabricating an integrated interconnect comprising steps of:  
depositing a lead on a substrate having an embedded conductive portion;  
and  
etching a cavity proximate to the embedded conductive portion to form a  
bond pad on a wall of the cavity.
16. The method of claim 15 wherein the step of depositing the lead and the  
embedded conductive portion comprises the steps of:  
forming an etched trench including an elongated portion and an  
embedded surface in the substrate; and  
depositing a conductive material in the etched trench and etching the  
cavity proximate to the embedded surface to form the bond pad.
17. The method of claim 16 wherein the etched trench is formed on a first  
surface of the substrate and further comprising the steps of:

2006270-26869007

depositing a protective layer in the etched trench prior to depositing the  
conductive material in the etched trench;  
depositing a patterned mask on a second surface of the substrate opposite  
the first surface; and  
etching the cavity from the second surface of the substrate.

18. The method of claim 17 wherein a portion of the substrate between the  
second surface and the protective layer of the trench is etched to form the bond  
pad with a raised surface spaced from the wall of the cavity.

19. The method of claim 17 wherein the step of depositing the protective  
layer comprises the steps of:  
depositing the protective layer on the substrate using a vapor deposition  
process; and  
removing excess protective layer from the substrate after depositing the  
conductive material into the trench.

20. The method of claim 17 wherein the substrate is a silicon  
microstructure and the protective layer is a silicon dioxide.

20059892-013003